

**STATEMENT**

**by Assoc. Prof. Kalin Valentinov Ivanov, PharmD, Ph.D.**  
**Department of "Pharmacognosy and Pharmaceutical Chemistry"**  
**Faculty of Pharmacy, Medical University - Plovdiv**

Regarding the dissertation work for awarding the educational and scientific degree 'PhD' in professional field 7.3 "Pharmacy", PhD program "Pharmacology (incl. pharmacokinetics and chemotherapy)".

**Author:** Assist. Prof. Kristina Yulianova Stavrakeva, PharmD

**Form of PhD:** regular, full-time

**Department:** Pharmacology, toxicology and pharmacotherapy

**Title:** "Study of biological effects of methanolic extract of *Micromeria frivaldszkyana* (De-  
gen) Velen. (*Lamiaceae*)"

**Scientific supervisors:** Assoc. Prof. Elisaveta Apostolova, PharmD, PhD, Department of Pharmacology, toxicology and pharmacotherapy and Prof. Anelia Bivolarska, MD, PhD Department of Medical biochemistry, Faculty of Pharmacy, Medical University of Plovdiv

### **1. General presentation of the procedure and the PhD student**

The submitted set of materials on paper / electronic media is in accordance with Article 70 (1) of Section I. Acquisition of the educational and scientific degree "PhD" and the scientific degree "Doctor of sciences" at MU-Plovdiv; Regulations of MU-Plovdiv since 28.01.2021 and includes the following documents:

- Application to the Rector of MU-Plovdiv for initiation of the procedure for defence of a PhD thesis
- Curriculum Vitae in European format with the PhD student's signature
- Notarized copy of a higher education diploma
- Orders for enrolment in the PhD program and discharge with the right to defend
- Order for conducting an exam from the individual plan and a corresponding protocol for a passed exam or minimum doctoral requirement in the specialty
- Protocol from the department council for preliminary discussion of the doctoral thesis, the decisions taken to initiate the procedure and for the composition of a scientific jury
- Dissertation (PhD thesis)
- Abstract of the dissertation
- List of scientific publications on the topic of the dissertation
- Copies of the scientific publications
- List of participations in scientific forums
- Declaration of originality and authenticity of the attached documents
- Other documents related to the course of the procedure – certificate of obtained credits

The doctoral student has presented 3 publications.

Notes and comments on the documents:

Assistant Professor Kristina Yulianova Stavrakeva graduated in Master of Pharmacy at MU-Plovdiv in 2022. After the graduation, she worked as a master pharmacist in a pharmacy. In January 2025, she started working as an Assistant Professor at MU-Plovdiv. She is fluent in English. Krstina Stavrakeva has interests in the fields of pharmacology, toxicology and pharmacotherapy. She

teaches the disciplines Pharmacology and Pharmacotherapy in Bulgarian and participates in an intra-university project. She has undergone training to work with the Body interact platform for clinical case demonstrations.

## **2. Relevance of the topic**

The PhD thesis “Study of biological effects of methanolic extract of *Micromeria frivaldszkyana* (Degen) Velen. (*Lamiaceae*)” is dedicated to the discovery and characterization of secondary plant metabolites and determination of their biological activity. The plant species *Micromeria frivaldszkyana* is endemic to Bulgaria and so far no detailed data on its composition have been published. The determination of its biologically active molecules and their potential pharmacological effect make the topic significant and suitable for PhD thesis research.

## **3. Understanding of the problem**

The PhD candidate demonstrates high awareness and competence on the topic, which leads to a clear formulation of the aim and tasks of her own research. Assist. Prof. Stavrakeva possesses in-depth theoretical knowledge and professional skills in the scientific topic and specialty.

## **4. Research methodology**

The variety of experimental methods, which are skillfully combined, allows achieving the set aim and obtaining an adequate answer to the tasks stated in the dissertation work. The methodologies include HPLC MS, GC MS, *in vivo* studies with laboratory animals, experimental models for evaluation of pharmacological effects, etc.

## **5. Characterisation and evaluation of the dissertation and its contributions**

The PhD thesis is 132 pages long, structured and executed according to the standards and requirements established by MU-Plovdiv. After the literature review, the aim and tasks, materials and methods, results and discussion are sequentially presented. The genus *Micromeria* of family *Lamiaceae* is characterized. The application of the plant in traditional medicine is described. The currently known composition, antioxidant properties and methods for their determination are reviewed. Methods for studying analgesic effect, inflammation, cognitive functions and experimental models hepatotoxicity are presented.

The main contributions are:

*Contributions with scientific and theoretical significance:*

1. For the first time, the acute toxicity of the methanolic extract of *M. frivaldszkyana* was investigated following oral administration in rats.
2. The comprehensive metabolomic analysis of the extract reveals a high content of phenolic acids and flavonoids, which likely determine the observed biological activities of the extract.

*Contributions with scientific and practical significance*

1. For the first time, a potential hepatoprotective effect of the methanolic extract of *M. frivaldszkyana* was established in a rat model of liver toxicity.
2. For the first time, an anti-inflammatory effect of the extract was established in a rat model of hind paw inflammation.

## 6. Assessment of the publications and personal contribution of the PhD student

The PhD candidate has presented 3 scientific publications related to the dissertation, one of which is published in a journal with an impact factor.

\*Total number of points of the PhD student by group of indicators D = 40.8.

The minimum number of points required in group indicators D for obtaining a PhD degree in area 7. Health and Sports, according to the Law on the Development of the Academic Staff in the Republic of Bulgaria, is 30.

The doctoral student has presented her results in 3 scientific conferences, 2 of which are international.

I am convinced of the personal participation of the PhD student in the performed dissertation research, as well as that the formulated contributions and obtained results are her personal merit.

## 7. Abstract

The abstract reflects the most important and critical moments of the dissertation work, ideas, conclusions and summaries of the conducted research. It is prepared according to the requirements and standards of MU-Plovdiv and reflects the main results achieved in the dissertation.


## CONCLUSION

The dissertation contains **scientific, scientifically-applied and applied results, which represent an original contribution to science** and **meet all the requirements** of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for the Application of the Law, and the Regulations of the Medical University - Plovdiv.

The presented materials and dissertation results comply with the specific requirements adopted in the Regulations of the Medical University - Plovdiv for the application of the Law. The dissertation shows that the PhD student Assist. Prof. Kristina Yulianova Stavrakeva possesses in-depth theoretical knowledge and professional skills in the scientific specialty of Pharmacology (including pharmacokinetics and chemotherapy), demonstrating qualities and skills for independent conduction of scientific research.

Due to the above, I confidently give my **positive assessment** of the conducted research, presented by the above-reviewed dissertation, abstract, achieved results and contributions, and **I propose to the esteemed scientific jury to award the educational and scientific degree of 'PhD'** to Assist. Prof. Kristina Yulianova, PharmD in the doctoral program in Pharmacology (incl. pharmacokinetics and chemotherapy).

13.03.2025

Prepared by: 

Assoc. Prof. Kalin Ivanov, PharmD, PhD/

Заличено на основание  
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